WHAT IS CLAIMED IS:

1. A semiconductor device, wherein a gap is formed between wirings formed on a substrate, and the gap is filled with gas having a thermal conductivity equal to or higher than three times that of air at 0°C.

2. A semiconductor device according to claim 1, wherein said gas is one of helium gas and hydrogen gas.

3. A semiconductor device according to claim 1, wherein a gas impermeable film through which said gas cannot be permeated is formed on the wiring and above the gap.

4. A semiconductor device according to claim 1, wherein a gas permeable film through which said gas can be permeated is formed on the wiring and above the gap, and a gas impermeable film through which said gas cannot be permeated is formed on the gas permeable film.

5. A wiring forming method in a semiconductor device, comprising the steps of:

(A) forming a wiring and a filling layer filled between wirings, on a substrate;

(B) forming a gas permeable film on the wiring and the filling layer;

(C) removing the filling layer through the gas permeable film so as to form a gap between the wirings;

(D) filling a gas having a thermal conductivity equal to or higher than three times that of air at 0°C through the gas permeable film into the gap; and

(E) forming a gas impermeable film on the gas permeable film.

6. A wiring forming method in a semiconductor device according to claim 5, wherein said gas permeable film is made of a porous insulation material, and

said gas impermeable film is made of silicon nitride.

7. A wiring forming method in a semiconductor device according to claim 5, wherein said gas one of is helium gas and hydrogen gas.

8. A wiring forming method in a semiconductor device, comprising the steps of:

(A) forming a plurality of wirings on a substrate; and

(B) forming a gas impermeable film on the wirings and above gaps existing between the wirings, in gas atmosphere having a thermal conductivity equal to or higher than three times that of air at 0°C.

9. A wiring forming method in a semiconductor device according to claim 8, wherein said gas impermeable film is made of a polyimide film.

10. A wiring forming method in a semiconductor device according to claim 8, wherein said gas is one of helium gas and hydrogen gas.

11. A wiring forming method in a semiconductor device, comprising the steps of:

(A) forming a plurality of wirings on a substrate;

(B) forming a gas permeable film on the wirings and above gaps existing between the wirings;

(C) filling a gas having a thermal conductivity equal to or higher than three times that of air at 0°C through the gas permeable films into the gaps; and

(D) forming a gas impermeable film on the gas permeable film.

12. A wiring forming method in a semiconductor device according to claim 11, wherein said gas permeable film is made of one of silicon oxide film and a low dielectric constant film; and

said gas impermeable film is made of silicon nitride.

13. A wiring forming method in a semiconductor device according to claim 11, wherein said gas is one of helium gas and hydrogen gas.